

CLAIMS

What is claimed is:

1. A method of molding an article comprising the steps of:
 - (1) defining a closed circuit;
 - (2) transiting a plurality of open molds about the closed circuit for a plurality of laps; and
 - (3) performing a predetermined series of operations during each of said plurality of laps.
2. A method as recited in claim 1, wherein said step (3) comprises a spraying operation.
3. A method as recited in claim 1, wherein said step (3) comprises a spraying operation during each of the laps.
4. A method as recited in claim 3, wherein said spraying operation occurs within a common spray booth during each of the laps.
5. A method as recited in claim 1, wherein the plurality of laps of said step (2) comprises three laps.
6. A method as recited in claim 1, wherein said step (2) comprises transiting a plurality of molds along the closed circuit in a predetermined sequence.
7. A method as recited in claim 6, further comprising the step of:
ordering the plurality of molds in a reoccurring sequence.

8. A method as recited in claim 6, further comprising the step of:
ordering the plurality of molds in a reoccurring sequence dependent upon which lap
each of the plurality of molds has completed.

9. A method as recited in claim 1, further comprising the step of:
ordering the plurality of molds in a reoccurring sequence, the reoccurring sequence
comprising a mold on a first lap following a mold on a final lap.

10. A method as recited in claim 9, wherein said ordering step further comprises
the step of:
following the mold on the first lap with a mold on a second lap.

11. A method as recited in claim 1, further comprising the step of:
queuing the plurality of molds after completion of one of the plurality of laps within a
queue along the closed circuit.

12. A method as recited in claim 11, wherein said queuing step further comprises
the step of:
curing the plurality of molds while within the queue.

13. A method as recited in claim 11, wherein said queuing step further comprises
the step of:
segregating the plurality of molds into a first and a second parallel queue relative to
which lap each of the plurality of molds has completed.

14. A method as recited in claim 13, wherein said queuing step further comprising the steps of:

releasing a first mold from the first queue;
releasing a second mold and a third mold from the second queue; and
sequencing the third mold after the second mold and the second mold after the first mold along the closed circuit.

15. A method as recited in claim 1, further comprising the steps of:
segregating the plurality of molds into a first queue and a second queue relative to which lap each of the plurality of molds has completed;

transiting the molds within the first queue through a first spraying operation; and
transiting the molds within the second queue through a second spraying operation.

16. A method as recited in claim 15, wherein said first spraying operation and said second spraying operation are performed sequentially.

17. A method as recited in claim 15, wherein said first spraying operation and said second spraying operation are performed sequentially by a single robotic sprayer.

18. A method of molding an article comprising the steps of:

- (1) defining a closed circuit;
- (2) ordering a plurality of open molds in a reoccurring sequence dependent upon which lap each of the plurality of molds has completed;
- (3) transiting the plurality of open molds about the closed circuit for a plurality of laps; and
- (4) performing a predetermined series of operations on each of the plurality of open molds during each of said plurality of laps, at least one of said plurality of operations comprising a spraying operation, the predetermined series of operations dependent upon which lap each of the plurality of molds has completed.

19. A method as recited in claim 18, further comprising the step of:
queuing the plurality of molds prior to said spraying operation.

20. A method as recited in claim 19, wherein said queuing step further comprises the step of:

segregating the plurality of molds into a first and a second parallel queue relative to which lap each of the plurality of molds has completed prior to said spraying operation.

21. A method as recited in claim 18, further comprising the step of:
segregating the plurality of molds into a first and a second parallel queue relative to which lap each of the plurality of molds has completed;
transiting a first mold from the first queue through a first spraying operation;
and
transiting a second mold from the second queue through a second spraying operation.

22. A method as recited in claim 21, further comprising the steps of:
transiting the first mold from the first spraying operation to a third queue
along a common circuit with said first queue; and
transiting the second mold from the second spraying operation to a fourth
queue along a common circuit with said second queue.

23. A method as recited in claim 22, further comprising the steps of:
merging the first mold from the third queue with the second mold from the fourth
queue into a fifth queue;
curing the first mold and the second mold within the fifth queue.

24. A method as recited in claim 22, further comprising the steps of:
releasing the first mold from the third queue;
releasing the second mold and a third mold from the fourth queue;
merging the first mold from the third queue with the second mold and the third mold
from the fourth queue into a fifth queue such that the molds within the fifth
queue are sequenced in a predetermined order; and
curing the molds within the fifth queue.

25. A method as recited in claim 24, further comprising the steps of:
releasing the first mold, second mold and the third mold from the fifth queue
as a set of molds sequenced in said predetermined order.

26. A multi-lap mold manufacturing system comprising:
a closed circuit;
a plurality of open molds that transit about the closed circuit for a plurality of laps; and

a plurality of Zones located along said closed circuit, each of said Zones performing an operation to each of said plurality of open molds relative to which lap each of the plurality of molds has completed one of said plurality of Zones comprising a spray Zone located along said closed circuit to perform a spraying operation during each of said plurality of laps.

27. The multi-lap mold manufacturing system as recited in claim 26, wherein said closed circuit comprises an overhead rail, said plurality of open molds hanging from said overhead rail.

28. The multi-lap mold manufacturing system as recited in claim 26, wherein said spray Zone comprises a first spray booth and a second spray booth.

29. The multi-lap mold manufacturing system as recited in claim 28, further comprising a spray robot between said first spray booth and said second spray booth.

30. The multi-lap mold manufacturing system as recited in claim 26, wherein one of said plurality of Zones comprises a curing Zone.